

Project Summary/Abstract

Project Title:	Installation of an Active Tracking Solar Energy System on a Commercial Building		
Project Director:	Nebraska Renewable Energy Systems, 708 North Davis, Oakland, NE 68045		
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Nebraska has excellent solar resources and the active tracking solar system being proposed in this project summary will demonstrate the increased capacity factor (actual production verse rated capacity) that can be obtained with these active systems over static or passive installations. Flat roof, active tracking systems are an excellent technology for use on commercial buildings after careful analysis of historic consumption factors and comparison with projected power production to ensure proper sizing and location.

Active tracking technologies are on the cutting edge of enhancing photovoltaic solar technology performance and need to be deployed in Nebraska so the increased performance can be shown and the improved economic returns possible through the increased electrical production can be demonstrated. This project has been designed to set the standard in proper application of this technology to an existing building so replication can result. The opportunity for adding such systems to the developed commercial environment is significant, but must be done properly to ensure success. These elements include:

- Thorough analysis of historical electrical consumption over a three year period showing a proper relationship between production and consumption
- Solar eye analysis that verifies the lack of shading due to the seasonal variations in solar absorption angles
- Utilization of sound and proven commercial technologies and products
- Thorough analysis of potential increased roof loads
- Proper installation to preclude wind damage
- Visual monitoring systems to ensure proper performance that can be remotely monitored
- Complete economic analysis to verify economic viability

The second significant component to the program will show the maximum possible power production under current net metering law. This law, enacted as Legislative Bill 436, limits interconnection of renewable energy systems to 25kw. The proposed system will demonstrate the maximum possible production possible under this current limit because this technology will provide an actual production that will exceed any other solar or wind technology of the same rated capacity. Having been involved in the development and adoption of Legislative Bill 436, it is unlikely Nebraska will see an increase in these limits in the next few years based on the determined opposition of utility lobbyists to such expansion. All know applications to Public Power for net metering of larger systems have been denied. Installed systems less than 100KW that are not net metered (net billed or PPA purchase) are not economically viable.